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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/538,803

06/13/2005

Yoshitaka Sakaue

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03/19/2009

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EXAMINER

VERDERAME, ANNA L

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/538,803	Applicant(s) SAKAUE ET AL.	
	Examiner ANNA L. VERDERAME	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uno et al. US 6,449,239 in view of Ishimaru et al. US 2002/0006580.

Uno et al. teaches an optical recording medium as shown in figure 8 wherein a polycarbonate resin substrate 100 is coated with ZnS-SiO₂ protective layers 102,106,202, and 206, Ge-Cr-N interface layers 103,105,203,and 205, and Ag-Pd-Cu alloy for reflective layers 107 and 207, TiO₂ for thermal diffusion layer 108 and Ge₄Sb₂Te₇ for recording layers 104 and 204(17/28-43). The TiO₂ heat dissipation layer had a thickness of 40 nm(17/41). The separating layer 109 may be formed of a material which enables optical absorbance with respect to the laser beam used for recording and reproduction to be as low as possible. As such a material SiO₂ is acceptable(11/54). Transmittance adjustment function of the TiO₂ thermal diffusion layer is disclosed at (9/60-10/52). A 30 nm thermal diffusion layer is disclosed at (17/3).

In this embodiment the TiO₂ thermal diffusion layer corresponds to applicant's second dielectric layer and the separating layer 109, which may be made of a material such as SiO₂, corresponds to applicant's first dielectric layer. These layers are in the

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same location, relative to the incidence plane of the recording light, as those recited by applicant.

Ishimaru et al. teaches inorganic dielectric materials for use in optical recording media as protective layers are disclosed. Among those listed are Al_2O_3 , ZnS , SiO_2 and Nb_2O_5 (0040).

The teachings of Ishimaru establish interchangeability with respect to SiO_2 and Nb_2O_5 .

It would have been obvious to modify the embodiment taught by Uno et al. in figure 8 by forming the separating layer 109 of Nb_2O_5 instead of SiO_2 based on the disclosure that this layer may be formed of an inorganic dielectric or glass material and based on the equivalence of SiO_2 and Nb_2O_5 layers in optical recording media shown by Ishimaru et al. and with the reasonable expectation of success.

It is the position of the examiner that deleted layer 8 is a protective layer made of a UV-curing resin, a dummy substrate, or a second grooved substrate.

3. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uno et al. US 6,449,239 in view of Ishimaru et al. 2002/0006580 as applied above and further in view of Ishibashi et al. JP-01-286136.

The teachings of over Uno et al. US 6,449,239 in view of Ishimaru et al. 2002/0006580 as applied above does not teach the limitations of claim 9.

Ishibashi et al. teaches a method by which a substrate made of polycarbonate is evacuated in a vacuum chamber to remove water and oxygen from the substrate. Then a SiO₂ protective layer is coated on the substrate. The result of such a process is improved adhesion of the base protective layer and to prevent cracks from generating(abstract).

It would have been obvious to modify the method of forming an optical recording medium like that taught in Uno et al. at (17/28-43) by removing water and oxygen from the polycarbonate substrate 100 by evacuation in a vacuum chamber before forming further layers in order to improve the adhesion of the protective layer and to prevent cracks from generating as taught in the abstract of Ishibashi et al.

Response to Arguments

In the embodiment wherein the separating layer 109 shown in figure 8 of Uno et al. is made of Nb₂O₅ the limitations of the instant claims requiring the TiO₂ layer and the Nb₂O₅ layer are provided in contact with each other is met. The examiner notes that applicant only discloses the TiO₂ layer being provided in contact with the Nb₂O₅ layer in a two layer embodiment as shown in figure 1. The single recording layer embodiment of Figure 2 does not show this.

The applicant argues that the formation of the TiO₂ layer is affected by the presence of water and oxygen in the substrate and that the removal of the water and oxygen from the substrate along with the formation of the TiO₂ layer on the Nb₂O₅ layer results in a layer having small variations in thickness. The examiner has provided

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reasoning for removing the water and oxygen from a polycarbonate substrate before film formation. Benefits of doing this include improved adhesion and prevention of cracks. These two benefits will result in a film having greater integrity. Both cracking and lack of adhesion will result in a film having a varied thickness. Just because the benefits recited by the examiner are not identical to those recited by the applicant do not mean that the modification would not have been obvious or that the results noticed by the applicant are unexpected.

The applicant states that variations in thickness are also reduced by forming the niobium oxide layer between the substrate and the titanium dioxide layer. The layers have this same ordering in the medium rendered obvious above.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANNA L. VERDERAME whose telephone number is (571)272-6420. The examiner can normally be reached on M-F 8A-4:30P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on (571)272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark F. Huff/

Supervisory Patent Examiner, Art Unit 1795

/Anna L Verderame/

Examiner, Art Unit 1795